35

PCT/GB2005/000488

Claims:

WO 2005/080222

- 1. A cartridge containing one or more beverage ingredients and being formed from substantially air- and water-
- 5 impermeable materials, said cartridge comprising an inlet for the introduction of an aqueous medium into the cartridge, and an outlet for a beverage produced from said one or more beverage ingredients, wherein said cartridge comprises means for producing a jet of the beverage, wherein said means for producing the jet of the beverage comprises an aperture in a beverage flow path linking the inlet to the outlet, characterised in that the cartridge comprises one or more microscopic projections at or in the vicinity of the

15

- 2. A cartridge as claimed in claim 1 wherein the one or more microscopic projections comprise fibrils.
- 3. A cartridge as claimed in claim 1 wherein the one or 20 more microscopic projections comprises surface irregularities.

aperture for contacting the beverage flow path.

4. A cartridge as claimed in claim 1 wherein the one or more microscopic projections comprises ribs.

25

- 5. A cartridge as claimed in any preceding claim wherein the one or more microscopic projections depend from a rim of the aperture.
- 30 6. A cartridge as claimed in any preceding claim wherein the one or more microscopic projections depend from a

WO 2005/080222 PCT/GB2005/000488

36

surface of a conduit forming a portion of the beverage flow path.

- 7. A cartridge as claimed in claim 6 wherein the one or more microscopic projections are located at an entrance to the flow conduit.
- A cartridge as claimed in claim 6 wherein the one or more microscopic projections are located at one or more
 positions in a region up to 30% along the length of the flow conduit measured from an upstream entrance.
- 9. A cartridge as claimed in any preceding claim wherein the microscopic projections have a height of 0.01 to 0.50 mm.
 - 10. A cartridge as claimed in claim 9 wherein the microscopic projections have a height of 0.09 to 0.11 mm.
- 20 11. A cartridge as claimed in any preceding claim wherein the microscopic projections have a thickness of 0.01 to 0.50 mm.
- 12. A cartridge as claimed in claim 11 wherein the 25 microscopic projections have a thickness of 0.06 to 0.10 mm.
 - 13. A cartridge as claimed in claim 12 wherein the microscopic projections have a thickness of 0.08 mm.
- 30 14. A cartridge as claimed in any preceding claim wherein the microscopic projections have a length of up to 2.5 mm.

WO 2005/080222

20

37

PCT/GB2005/000488

- 15. A cartridge as claimed in any preceding claim wherein the aperture has a cross-sectional area of 0.4 to 0.7 $\,\mathrm{mm}^2$.
- 5 16. A cartridge as claimed in any preceding claim wherein the aperture is in the form of an elongated slot.
- 17. A cartridge as claimed in any preceding claim further comprising at least one inlet for air and means for generating a pressure reduction of the jet of beverage, whereby, in use, air from the at least one air inlet is incorporated into the beverage as a plurality of small bubbles.
- 15 18. A cartridge as claimed in claim 17 wherein the at least one air inlet is provided downstream of the aperture.
 - 19. A cartridge as claimed in claim 17 or claim 18 wherein the insert comprises a discharge spout defining the outlet.
 - 20. A cartridge as claimed in claim 19 wherein the jet of beverage issuing from the aperture is directed into the discharge spout.
- 25 21. A cartridge as claimed in claim 20 wherein the jet of beverage impinges a surface of the discharge spout between issuing from the aperture and exiting the outlet.